Executive Summary

S.1 Project Description

This Draft Environmental Impact Statement (DEIS) has been prepared to provide information for federal actions by the Federal Highway Administration (FHWA) and the U.S. Army Corps of Engineers (USACE). These actions are, respectively, the issuance of the Record of Decision for the U.S. Route 34 project and approval or disapproval of a Clean Water Act Section 404 Permit.

The proposed action is to provide an improved transportation facility to U.S. Route 34 from the intersection of Carman Road, East of Gulfport, and extending 40 kilometers (km) [24.85 miles (mi)] to the east**,** connecting to an existing four-lane facility in the Monmouth area in Henderson and Warren Counties. This improvement is the final section being studied for multi-lane improvement of the U.S. Route 34 between I-74 near Galesburg, Illinois and Burlington, Iowa. The Illinois Department of Transportation (IDOT) has prepared this DEIS to identify the potential environmental effects associated with the proposed action in accordance with the National Environmental Policy Act of 1969 (NEPA), the 1978 Council of Environmental Quality (CEQ) regulations, and the FHWA and IDOT guidelines.

S.2 Purpose and Need

The purpose of the proposed project is to provide a high-type transportation facility for local and regional traffic in Henderson and Warren Counties which includes a continuous four-lane link between the existing freeway at Gulfport in the vicinity of Carman Road to east of Monmouth. The purpose of the project is to improve traffic safety, system continuity, and system capacity. Benefits associated with the proposed project include less congestion along the existing roadway and fast, safe, and efficient travel within, and through, the project corridor by providing a continuous four-lane route.

Between January 1995 and December 1997, 286 accidents have occurred on U.S. Route 34 between Carman Road and Illinois Route 164 east of Monmouth resulting in four fatalities. Seven high-accident locations have been identified within the U.S. Route 34 project corridor (see Figure 1-1). Much of U.S. Route 34 from U.S. Route 67 to Gulfport lacks adequate shoulders and clear zones. Portions of this section do not meet current standards for horizontal alignment, and passing sight distance along this section is limited.

Within the four-lane expressway around the west and north sides of Monmouth, the accident rate for 1998, 1999, and 2000 has ranged up to 4.38 accidents per million vehicle miles traveled as compared to the statewide average accident rate for an urban divided highway of 1.52 accidents per million vehicle miles traveled. The proposed improvements to U.S. Route 34 are expected to reduce traffic accident rates in these areas by providing a safer, more efficient route between the Monmouth and Gulfport areas.

U.S. Route 34 is a key regional corridor for the east/west movement of people and goods in, and through, west central Illinois. An interruption in four-lane facilities currently exists along U.S. Route 34 between Gulfport and Monmouth. The proposed project will improve the function and continuity of this regional highway.

The level of service (LOS) is a qualitative measure describing operational conditions within a traffic stream. Design year (2025) volumes from 6,200 to 17,500 average daily traffic (ADT) will result in a reduced LOS for many portions of the existing facility which translates to reduced speeds and maneuverability, higher accident rates, and increased congestion for many portions of the route. The

proposed project will improve system capacity and is projected to provide an LOS exhibiting free-flow conditions in the design year, 2025.

S.3 Affected Environment

Townships located within the project corridor include Biggsville, Carman, and Gladstone in Henderson County and Lenox, Monmouth, and Tompkins in Warren County. The population and community characteristics reflect the importance of the agricultural base of these areas. Residences in the project corridor tend to be single family units and the average household size in the two counties is approximately 2.5 people. The median age range is from 36.6 to 41.7 years, while the population segment over 65 is increasing. Only small portions of the population are African-American, American Indian, or other minorities. In 1995, the per capita income for Henderson and Warren Counties ranked 95th and 91st respectively out of 102 counties in Illinois.

Existing land uses in Henderson and Warren Counties are predominantly associated with agricultural activities. Over 80 and 91 percent of the total area of Henderson and Warren Counties, respectively, are farmed. Farming revenue is derived from both crops and livestock, and has continued to be a key component of employment and revenue patterns. It is estimated that over 50 percent of the total farmland within the project corridor is considered prime farmland.

Preliminary Phase I archaeological survey results indicate that the project corridor contains several potentially significant prehistoric occupation sites. There are two sites with clear evidence of prehistoric burial mounds (Goatley, 1998). The historical architectural inventory for historic structures identified 108 sites containing 307 individual structures within the project corridor. A total of 34 structures on 25 sites were identified as potentially eligible for the National Register of Historic Places (NRHP). The majority of these structures are residences and barns built in the early- to mid-twentieth century (White, 1996).

Vegetation and habitat within the project corridor contain primarily row crop agriculture with small pockets of woodland, old field, wetland, and prairie. The Illinois Natural History Survey (INHS) identified six noteworthy plant communities in the project corridor, five prairie communities, and one upland forest. The brown creeper and the western hognose snake have been observed within the project corridor. The State of Illinois lists both of these species as threatened. No federal or state listed endangered species have been observed in the project corridor.

Permanently flowing streams within the project area include the Carthage Lake drainage ditch, P.D. Creek, an unnamed tributary to the Mississippi River (locally known as Lone Tree Creek), Old Tom Creek, South Henderson Creek, and Markham Creek. South Henderson Creek is the primary perennial stream and Gladstone Lake and Citizen's Lake are the largest lakes within the project corridor. Groundwater is the primary source of drinking water and agricultural irrigation water. Ninety-four jurisdictional wetland sites comprising 49.21 hectares (ha) [121.60 acres (ac)] were identified within the project corridor.

Portions of the western project corridor are located within the Mississippi River floodplain. Most of this floodplain has been cleared and is currently used for agricultural purposes including cropland and pasture. There is a small floodplain associated with South Henderson Creek consisting of a narrow wooded riparian zone used for agricultural purposes.

No Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) sites within 1 mile of existing U.S. Route 34.

S.4 Alternatives

An initial investigation was conducted to determine the most appropriate facility type that would fulfill the transportation needs and objectives identified in the Purpose and Need. Analysis of facility type alternatives between Carman Road and U.S. Route 67 included upgrade of U.S. Route 34 to an enhanced two-lane section (full width pavement, full width shoulders, improved geometry, and limited access), expressway, and freeway. Additionally, there was investigation to determine the effectiveness of an upgrade to the existing facility versus a freeway through the Monmouth area. A number of project alternatives were considered in order to address the current and future transportation needs of the U.S. Route 34 corridor. Alternatives considered included:

- No Action;
- Mass Transit;
- Transportation System Management (TSM);
- Upgrade of Existing Facility; and
- Build Alternates on New or Partial-New Location.

S.4.1 No Action

Under the No Action alternative, no improvements would be made to the existing roadway beyond what is currently scheduled. This alternative would not accommodate projected increases in traffic and would not increase capacity, improve access, reduce congestion, increase safety, address safety concerns at the high accident locations in Monmouth, improve deteriorating pavements or improve route continuity. Consequently, the No Action alternative does not satisfy the objectives of the project Purpose and Need and was eliminated as a viable option.

S.4.2 Mass Transit

No mass transit systems operate between, or within, the project termini. There are no documented plans by the local planning organizations or the regional planning agency to implement a mass transit system in the foreseeable future. Due to the rural nature of the project corridor, it is unlikely that a mass transit alternative would be effective enough to affect vehicle use. The use of mass transit would not improve safety or relieve congestion of the existing facility and was eliminated since this alternative would not satisfy the project Purpose and Need.

S.4.3 Transportation System Management (TSM)

TSM actions, such as signal phasing and re-routing of traffic along the existing roadway system, were eliminated as a stand-alone alternative because it failed to address the objectives of the project Purpose and Need. This alternative would not relieve congestion on existing U.S. Route 34 or improve route continuity. However, pertinent aspects of this alternative will contribute to an increased efficiency of the local and regional transportation system in the urbanized area of Monmouth. Consequently, TSM improvements, such as turning lanes, improved access, signalization, and traffic signal modifications, are being proposed as components of the preferred alternative in Monmouth.

S.4.4 Upgrade of Existing Facility

This alternative consisted of sustaining a two-lane facility through the design year 2025, with an upgrade to an enhanced two-lane status. A traffic study concluded that an improved two-lane facility would not meet the project Purpose and Need to improve system capacity, system continuity and traffic safety, and was eliminated from further study.

S.4.5 Build Alternates on New or Partial New Location

Numerous build alternates on new or partial new location were developed and evaluated for an improved four-lane expressway facility between Carman Road and U.S. Route 67. Preliminary study

alternate development, evaluation, and refinement were accomplished utilizing a two-phased approach. As a consequence of a variable landscape, and in order to provide for a full examination of all practicable and reasonable study alternates within distinct geographical locations, the project corridor was divided into sections between Carman Road and U.S. Route 67. Evaluation criteria were developed that involved traffic and transportation issues, social and economic characteristics, physical and biological factors, and the potential to impact regulated resources (i.e., wetlands).

In order to provide a thorough examination of preliminary study alternates relative to the social, economic, and physical landscape, and the stated project goals and objectives, the project corridor was divided into six sections. In total, 39 alternates were developed within the sections. Alternate alignments within each section were eliminated from further consideration if they were determined to have relatively high impacts to environmental resources and/or did not provide the level of efficiency to meet the transportation objectives of the project.

During the second phase (Phase II) of evaluating the preliminary study alternates, the corridor west of U.S. Route 67 was divided into three sections by combining the previously utilized sections. The evaluation criteria were refined to include additional agricultural impact indicators. This evaluation resulted in the selection of four, end-to-end Final Study Alternates.

The final round of evaluations examined the ability of each alternate to maximize the transportation objectives of the project and determine the potential environmental consequences that each may incur. The final study alternates were evaluated against the No Action alternative. This evaluation resulted in the recommendation of a single preferred build alternate. Ultimately, the preferred alternative was selected as it responded to the project Purpose and Need statement, and most closely achieved the transportation objectives and goals while integrating a full consideration of the potential impacts to the human and natural environments. The preferred alternative involves a four-lane expressway on new and partial new location between Carman Road and U.S. Route 67. The right-of-way needed to construct the preferred alternative includes 240 ha (593 ac) of existing IDOT right-of-way and 278 ha (687 ac) of new right-of-way. Intelligent Transit System (ITS) and TSM options will be implemented through the Monmouth area in order to utilize the existing expressway facility while meeting the project objectives and minimizing disruption to the community.

S.5 Summary of Environmental Impacts

The construction of the preferred alternative would result in the displacement of ten residences (Table S-1). Relocation assistance services will be available to all displaced residents. One business will be displaced by the preferred alternative. Community services and facilities and tax bases are not expected to be adversely altered by the preferred alternative.

A total of 28 farm operations (by tract) will be severed, and there are 49 otherwise affected farm operations (by tract). The total number of affected farms (70) will not equal the sum of severed farm operations by tract and otherwise affected farm operations by tract because farm operations may consist of multiple tracts. There will be 95 farm owners and 71 operators affected by the preferred alternative. Approximately 274 ha (677 ac) of agricultural land will be impacted by the construction and operation of the preferred alternative. The construction of the preferred alternative will create two landlocked parcels and result in 23 uneconomical remnants.

The preferred alternative will not impact any historical or archaeological cultural resources that are potentially eligible for inclusion in the National Register for Historic Places.

Table S-1. Summary of Impacts of the No Action and New Right-of-Way for the Preferred Alternative, U.S. Route 34

	No Action	Preferred Alternative
Total Residential Displacements	0	10
Farm Residents	0	7
Non-farm Residents	0	3
Business Displacements	0	1
Hectares of Farmland Impacted (Acres)	0	274 (677)
Farm Severances (by tract)	0	28
Total Number of Affected Farms	0	70
Number of Farm Owners Affected	0	95
Adverse Travel, # km (mi) per trip	0	17.9 (11.1)
Number of Farm Operators Affected	0	71
Hectares of Prime Farmland (Acres)	0	191 (471)
Hectares of Statewide and Local Important Farmland (Acres)	0	23.5 (58)
Landlocked Parcels	0	2
Cultural Resources Potentially Eligible for NRHP	0	0
Potentially Historic Structures Affected	0	0
Hectares of Woodland (Acres)	0	8.3 (20.1)
Hectares of Affected 100-Year Floodplains (Zone A) (Acres)	23.7 (58.6)	6.8 (16.8)
Surface Water Crossings	10	13
Hectares of Affected Wetlands (Acres)	0	0.17 (0.42)
Number of Parks Affected	0	0
Number of Residences Meeting or Exceeding 66 dBA (Projected 2025)	26	22
Number of Residences Meeting or Exceeding 66 dBA (2025) but Below 66 dBA in the Existing Condition	0	1
Number of Special Waste Sites Affected	0	2
Federally Protected Species	No impact	No impact

Source: Harding ESE, 2001.

The proposed project area is categorized as an air quality attainment area by the Illinois Environmental Protection Agency (IEPA) and the U.S. Environmental Protection Agency (USEPA). Since the area is an attainment area, the State Implementation Plan (SIP) does not require or specify transportation control measures for this area. The preferred alternative is a low-volume roadway with a forecasted ADT of 16,000 or less vehicles at the end of the first year of operation, therefore, this project is exempted from a project-level carbon monoxide air quality analysis [Illinois Bureau of Design and Environment (BDE) Manual, 1977]. [IDOT and IEPA "Agreement of Microscale Air Quality Assessments for IDOT Sponsored Transportation Project."]

The STAMINA noise model was used to determine existing noise levels and potential noise impacts at 13 receptors representative of residential areas along the existing U.S. Route 34 and within Monmouth. The STAMINA model indicates that the preferred alternative will impact seven receptors representing 22 residents.

Construction of the preferred alternative will improve overall transportation system efficiency for local and through traffic and thereby reduce energy consumption by motor vehicles.

The preferred alternative will not affect any commercial mining operations, or significantly impact bedrock, surface geology, or topography.

The preferred alternative will require 8.3 ha (20.4 ac) of woodland areas located in seven different areas. These areas are relatively small and offer limited habitat structure and quality; therefore, impacts to the majority of the natural vegetation and habitat are not anticipated to be significant. Approximately 0.65 ha (1.61 ac) out of a total 1.56 ha (3.85 ac) (nearly 42 percent) of a Grade C to C-, sand hill prairie (Botanical Site #3) will be affected by the limits of construction for the preferred alternative.

Due to the agricultural nature of the landscape, and avoidance of larger less disturbed tracts, significant impacts are not anticipated to wildlife. The preferred alternative is not expected to impact any federal or state listed species.

There are 13 surface water crossings. The preferred alternative will cross 5 different perennial streams 7 times and 6 different intermittent streams 6 times. One intermittent stream will be relocated 113 m (371 ft) as a result of being culverted. Another intermittent stream will be relocated 110 m (361 ft) as a result of the placement of fill material for the establishment of the roadbed for the preferred alternative. To reduce the effects of roadway construction on surface water resources, the design and construction of the preferred alternative will adhere to IDOT's "Standard Specifications for Road and Bridge Construction" and "Special Provisions for Temporary Project Water Pollution Control." The preferred alternative is not expected to have a significant effect on total groundwater supply or groundwater quality.

Approximately 23.7 ha (58.6 ac) of the existing right-of-way for U.S. Route 34 are built within the 100-year floodplain (Zone A). New right-of-way for the preferred alternative will potentially impact a total of 6.8 ha (16.8 ac) of designated 100-year floodplain (Zone A) with a length of 1.2 km (0.7 mi). There are no Federal Emergency Management Agency (FEMA) floodways within the project corridor.

With regards to the Mississippi River floodplain, the modifications to drainage structures will result in an insignificant change in their capacity to carry flood water. This change will causes a minimal increase in flood heights and flood limits. These minimal increases will not result in any significant adverse impacts on the natural and beneficial floodplain values; there will be no significant change in flood risks; and there will be no significant increase in potential for interruption or termination of emergency service or emergency evacuation routes; therefore, it has been determined that this encroachment is not significant. The impact on South Henderson Creek floodplain is measurable and, while the backwater (i.e., the increase in flood elevation upstream of the crossing) is less than State of Illinois maximum allowable for a new bridge, the backwater impact may extend upstream for a considerable distance and will incrementally increase the flood risks on those lands adjacent to the existing floodplain for a distance of at least 304.8 m (1,000 ft). For a 100-year flood, the preferred alternative could affect cropland and woodland immediately upstream of South Henderson Creek.

Only minor impacts to wetlands are anticipated by the preferred alternative which will potentially affect five wetlands comprising a total impact of 0.17 ha (0.42 ac) wetlands.

No Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) sites will be involved (nor impacted by) the preferred alternative.

Roughly 2.5 million cubic meters of fill material will be required for the construction of the preferred alternative. Of this 2.5 million cubic meters, 1.4 million cubic meters of material will be excavated as part of the preferred alternative and 1.1 million cubic meters of materials will be required as borrow.

S.6 Areas of controversy

There are currently no known areas of public controversy for the proposed project.

S.7 Issues to be Resolved

There are no known unresolved issues that would affect the U.S. Route 34 project.

S.8 Other Federal and State Actions (Permits)

The following permits are anticipated to be required for the preferred alternative:

- A Clean Water Act Section 404 permit will be required from the USACE for discharge of dredge or fill materials into water of the United States, including wetlands and stream crossings.
- All Section 404 permits will require Section 401 water quality certification from the IEPA for discharge of dredge or fill material into waters of the United States.
- Section 402 [National Pollutant Discharge Elimination System (NPDES)] permits will be required from the IEPA for construction activities that result in the disturbance of 2 ha (5 ac) or more of surface vegetation.
- A Regulation of Public Waters permit will be required from the Illinois Department of Natural Resources (IDNR), Office of Water Resources for encroachment on any public body of water.
- Since floodways have not been mapped for the project corridor and the preferred alternative involves floodplains, coordination with the IDNR-Office of Water Resources is necessary to determine if state permits are required.